Satchwell

MN 100
MN 150
MN 200

I/A SERIES® MICRONET MN 100, MN 150 AND MN 200 CONTROLLERS

Order Types:

MNL-10RF2	-	MN 100 LONMARK Controller with Fan Coil Profile
MNL-10RH2	-	MN 100 LONMARK Controller with Heat Pump Profile
MNL-10RR2	-	MN 100 LONMARK Controller with Roof Top Profile
MNL-10RS2	-	MN 100 LONMARK Controller with Satellite Profile
MNL-15RF2	-	MN 150 LONMARK Controller with Fan Coil Profile
MNL-15RH2	-	MN 150 LONMARK Controller with Heat Pump Profile
MNL-15RR2	-	MN 150 LONMARK Controller with Roof Top Profile
MNL-15RS2	-	MN 150 LONMARK Controller with Satellite Profile
MNL-20RF2	-	MN 200 LONMARK Controller with Fan Coil Profile
MNL-20RH2	-	MN 200 LONMARK Controller with Heat Pump Profile
MNL-20RR2	-	MN 200 LONMARK Controller with Roof Top Profile
MNL-20RS2	-	MN 200 LONMARK Controller with Satellite Profile

The I/A Series MicroNet MN 100, MN 150 and MN 200 Controllers are interoperable, LONMARK® compliant controllers. When loaded with an application from the WorkPlace Tech Tool application library or programmed with the WorkPlace Tech Tool, these controllers provide control for packaged rooftops, heat pumps, fan coils, unit ventilators and similar applications. All three controllers feature Sensor Link (S-LK) support, LED indication and field wiring terminal blocks, as well as DIN rail or panel mounting ability. These controllers can function in either standalone mode or as part of a LONWORKS® FTT-10 Free Topology communications network.

The MN 100, MN 150 and MN 200 controllers use the same physical packaging, but differ in the onboard I/O points they provide.

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Windows is a trademark of Microsoft.

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FEATURES

- **LONMARK compliant, programmable**
- **Capability to function in standalone mode or as part of a LONWORKS FTT-10 Free Topology communications network.**
- **Proportional (P), Proportional Plus Integral (PI), and Proportional Plus Integral and Derivative (PID) control for cooling and heating.**
- **Separate wiring subbase and electronics.**
- **Onboard LED indication without cover removal.**
- **Plenum-rated enclosure.**
- **Protective hinged covers provide access to field wiring terminals.**
- **Satellite profile allows controller to be used in a broad range of applications.**

Data Sheets
DS 10.000 - MN Sx Sensors
DS 10.100A - Wiring and Commissioning Information
DS 10.201 - MicroNet View Software
DS 10.210 - MicroNet Manager Interface

Multi-Lingual Instructions
MLI 10.100 - Installation Instructions

SPECIFICATIONS

Order Type	Description	Inputs/Outputs	Control Strategies
MNL-10RF2	MN 100 LonMark Controller with Fan Coil Profile	1 Digital Input (DI) 2 Universal Inputs (UI) 4 Digital Outputs (DO)	• Fan Coil • Heat Pump • Packaged Rooftop • Satellite
MNL-10RH2	MN 100 LonMark Controller with Heat Pump Profile		
MNL-10RR2	MN 100 LonMark Controller with Roof Top Profile		
MNL-10RS2	MN 100 LonMark Controller with Satellite Profile		
MNL-15RF2	MN 150 LonMark Controller with Fan Coil Profile	3 Universal Inputs (UI) 6 Digital Outputs (DO) 2 Analogue outputs (AO)	• Fan Coil • Heat Pump • Packaged Rooftop • Satellite
MNL-15RH2	MN 150 LonMark Controller with Heat Pump Profile		
MNL-15RR2	MN 150 LonMark Controller with Roof Top Profile		
MNL-15RS2	MN 150 LonMark Controller with Satellite Profile		
MNL-20RF2	MN 200 LonMark Controller with Fan Coil Profile	2 Digital Inputs (DI) 3 Universal Inputs (UI) 6 Digital Outputs (DO) 2 Analogue outputs (AO)	• Fan Coil • Heat Pump • Packaged Rooftop • Satellite
MNL-20RH2	MN 200 LonMark Controller with Heat Pump Profile		
MNL-20RR2	MN 200 LonMark Controller with Roof Top Profile		
MNL-20RS2	MN 200 LonMark Controller with Satellite Profile		

HARDWARE SPECIFICATIONS

Dimensions: 109mm Height x 111mm Width x 51mm Depth

Enclosure: Conforms to NEMA-1 requirements.
Meets UL94-5V flammability for plenum application use.

Conduit Knockouts: Not applicable.

Power Supply Input: 20.4 to 30Vac, 50/60Hz.

Maximum Power Consumption: 15VA @ 24Vac, 50/60Hz, excluding relay output power.

Surge Immunity Compliance: ANSI C62.41 (IEEE-587, Category A & B).

Agency Listings: FCC, Class B
Canadian Department of Communications, Class A
UL Listed - UL-916
UL - Listed to Canadian Safety Standards

European Community – EMC Directive: EN50081-1 (Emissions)
EN50082-1 (Immunity)

Compliance: CE

Mounting: 35mm DIN rail or panel.

Ambient Limits: **Operating Temperature:** -40 to 60°C
Shipping and Storage Temperature: -40 to 71°C
Humidity: 5 to 95%rh, non-condensing.

Wiring Terminals: Screw terminals max. conductor size 1.5mm^2 (16 AWG)

Inputs (from I/A Series MicroNet Sensors): **Space Temperature:** 0 to 50°C
Adjustable Setpoints: 4.4 to 35°C
Operational Mode: Heat/Cool/Auto/Off.
Fan: On/Speed (Low/Medium/High)/Auto.
Override Pushbutton: For standalone occupancy control or remote status monitoring of local status condition.

Digital Inputs: (MN 100 and 200 only) **Input Type:** Dry Contact. Detection of closed switch requires <300Ω.
Detection of open switch requires >100kΩ.

Digital Outputs: **Current Ratings:** 24VA at 24Vac, pilot duty.

Universal Inputs: **10KΩ Thermistor input:** -40 to 121ºC TS-5700-850 or equivalent
Voltage: 0 to 5Vdc
Current: 0 to 20mA requires an external 250Ω shunt resistor
Digital Input: Dry Contact. Detection of closed switch requires <300Ω.
Detection of open switch requires >1.5KΩ.

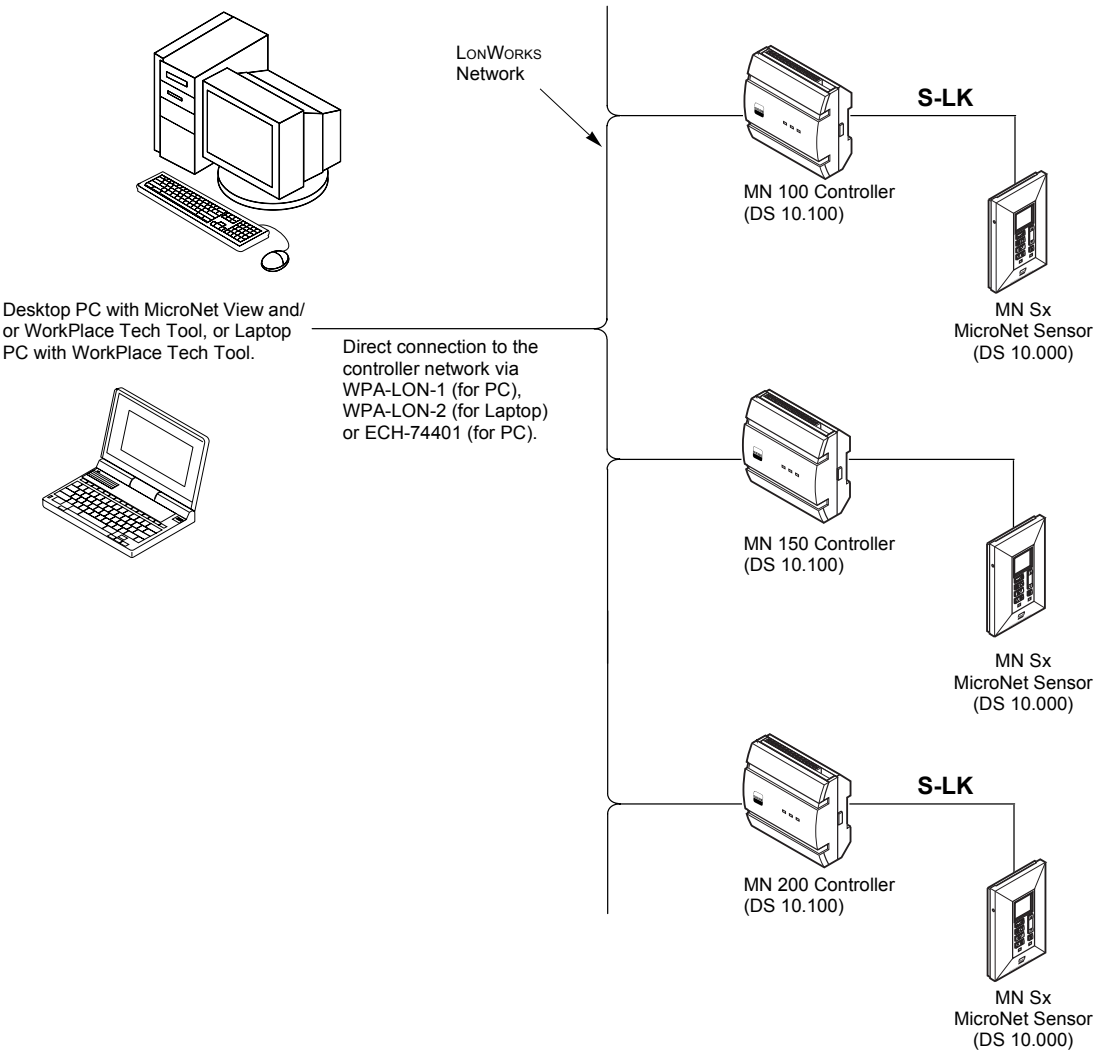
Analogue Outputs: (MN 150 and 200 only) **Current:** 0 to 20mA. (Output load from 80 to 550Ω).

ACCESSORIES

AD-8961-220	Voltage divider (converts 1 to 11Vdc signal to 0.45 to 5Vdc signal) for universal inputs
AD-8969-202	250Ω shunt resistor kit for 4 to 20mA universal inputs
LON-TERM1	Single LON® Terminator for Free Topologies
LON-TERM2	Double LON Terminator for Bus Topologies (two required)
MN Sx	I/A Series MicroNet Sensors
WPA-LON-1	PC ISA card (16-bit) to connect PCs to LonWorks FTT-10 network
WPA-LON-2	PCMCIA card to connect Laptop PCs to LonWorks FTT-10 network
ECH-74401	PCLTA-20/FT-10 PCI (32-bit) Desktop Interface
WP-TECH-CD-0-UK	WorkPlace Tech Tool

TYPICAL SYSTEM DIAGRAM

I/A SERIES MICRONET MN 100, MN 150 AND MN 200 CONTROLLER



SOFTWARE CAPABILITIES

- Allows design of a complete custom application for each controller.
- LONMARK-compatible.
- WorkPlace Tech Tool is capable of reconfiguring and editing application configuration data.
- HVAC interoperability achieved through use of LONMARK HVAC profiles.
- All controllers are field programmable, but controllers with satellite profiles are especially suited for a broad range of applications, providing solutions to building control requirements.

COMMUNICATIONS

LONWORKS A LONWORKS FTT-10 Free Topology communications network can host up to 63 devices per segment. This can be increased to 128 using a repeater. Details of network design and wiring requirements can be found at www.echelon.com/Products. Controllers on this network communicate with other controllers in a peer-to-peer fashion and connect to MicroNet View and the WorkPlace Tech Tool via the standard LON FTT-10 cards. MicroNet View provides alarm management and dynamic trend logging. Applications can be prepared and downloaded to application specific I/A Series MicroNet controllers from the WorkPlace Tech Tool. A LONWORKS FTT-10 network has a communications speed of up to 78k baud.

S-LK Provides power and communication interface to the I/A Series MicroNet Sensor. Maximum 61m (200ft.) between controller and the I/A Series MicroNet Sensor.

APPLICATIONS

Designed for new or existing system installations, the MN 100, MN 150 and MN 200 Controllers provide control for the following types of applications:

- Unit Ventilators
- Heat Pumps
- Fan Coils
- Packaged Rooftops

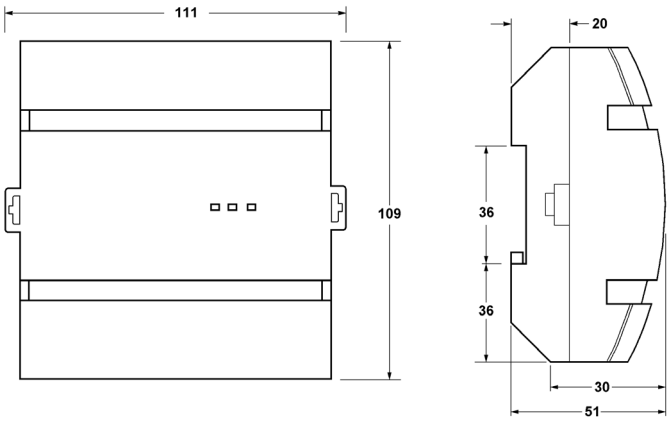
CONNECTIVITY

The MN 100, MN 150 and MN 200 Controllers offer the advantages of standalone and networked control. Using an I/A Series MicroNet Sensor (MN Sx Series), the operator can monitor controller performance and edit operational values. The WorkPlace Tech Tool software is used to download applications from the application library to program the controllers directly via the LON PC cards. If the MN 100, MN 150 and MN 200 controllers are used on a network, network-level management functions are provided by MicroNet View.

Note:

Standard LON binding tools such as Echelon's LonMaker® for Windows® are used to create network bindings between MicroNet devices.

DIMENSION DRAWING



Dimensions in mm

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Cautions

- **Do not apply any voltages until a qualified technician has checked the system and the commissioning procedures have been completed.**
- **This is a 24Vac device. Do not exceed rated voltage. Local wiring regulations and usual safety precautions apply.**
- **24Vac must be supplied by a transformer conforming to EN 60742.**
- **Do not exceed the maximum ambient temperature.**
- **Interference with parts under sealed covers invalidates guarantee.**
- **The design and performance of Satchwell equipment is subject to continuous improvement and therefore liable to alteration without notice.**
- **Information is given for guidance only and Satchwell do not accept responsibility for the selection and installation of it products unless information has been given by the Company, in writing, relating to a specific application.**
- **A periodic check of the Building Management System is recommended. Please contact Satchwell Control Systems Limited Customer Care Centre for details.**

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